

REMARKS

Claims 1-8, 10, 12-14, 16, 18, and 21-31 are pending. Claims 1, 5-8, 10, 12, 14, 16, 18, 22, and 25 have been amended, claims 9, 11, 15, 17, 19, and 20 have been canceled, and new claims 26-31 have been added to recite additional features of the embodiments disclosed in the specification.

Applicants submit that entry of this paper is proper on grounds that the amendments to rejected claims merely add subject matter to independent claims that were already examined or rewrite dependent claims into independent form. Accordingly, no new issues have been presented. Also, the number of claims added do not cause the total number of claims now pending to exceed the number of finally rejected claims.

Reconsideration of the application is respectfully requested for the following reasons.

In the Final Office Action, claims 15 and 25 were rejected under 35 USC § 112, second paragraph, for failing to provide antecedent basis for “said low weighting value” and “said first slope” respectively. Claim 15 has been canceled and claim 25 has been amended to provide an antecedent basis for the term “first slope.” Applicants submit that these amendments are sufficient to overcome the § 112 rejection.

Claims 1 and 5-25 were rejected under 35 USC § 103(a) for being obvious in view of the Sakita patent taken in combination with Figures 3 and 5 of Applicants drawings (hereinafter referred to as “AAPA”).

The Sakita patent discloses a method for driving a plasma display panel. This method involves applying a first voltage application pattern to X or Y electrodes in the initialization period of a first sub-field and a second voltage application pattern to the same electrodes in the initialization period of a second subsequent sub-field of a frame. (See column 18, lines 6-16).

However, the Sakita patent does not teach or suggest the first and second voltage application patterns correspond to the specific waveforms recited in the rejected claims. To make up for these deficiencies, the Examiner cited AAPA which shows a first method that applies a ground voltage in the initialization periods of all sub-fields in a frame (Figure 3), and a second method which allows a sustain electrode to assume a floating voltage during the initialization period of a sub-field (Figure 5).

While the Sakita patent discloses that it was known to apply different voltage patterns during the initialization periods of different sub-fields of a frame, neither Sakita nor any of the other references of record teaches or suggests applying the specific combinations of waveforms to different sub-fields of a same frame during initialization as recited in the presently amended claims.

A. Claims 1, 12, and 21

Claim 1 recites “the sustain electrode is electrically floated in the first waveform during the first time interval that is a portion of the set-up interval, and the sustain electrode is supplied with substantially a ground voltage in the second waveform during the second time

interval that is a portion of the set-up interval of all or fewer than all of the remaining sub-fields.” (See, for example, Figure 6 for support). AAPA shows applying floating and ground voltages to all sub-fields in different frames according to different driving methods that are separately applied. However, AAPA does not teach or suggest applying floating and ground voltages in the initialization periods of different sub-fields in a same frame as recited in claim 1.

Moreover, in rejecting claim 1, the Examiner emphasized that by Applicants’ own admission, the waveforms of Figures 3 and 5 were known to be applied at the time the claimed invention was made. However, neither these figures nor any of the other references of record teach or suggest that it was known to apply the different specific waveforms of claim 1 in the initialization periods of different sub-fields in a same frame.

Absent a teaching or suggestion of this specific combination of waveforms, it is respectfully submitted that a Sakita-AAPA combination does not render claim 1 or any of its dependent claims obvious. Claims 12 and 21 recite features similar to those that patentably distinguish claim 1 from the cited combination and therefore are also allowable.

Dependent claim 7 separately recites that the sustain electrode of claim 1, “is electrically floated during a shorter time than said first time interval in the set-up interval.” This is shown, for example, in Figure 6 wherein the rising portion of the floating voltage applied to the sustain electrode does not last the entire duration of the first time interval, shown by Td. These features are not taught or suggested by the cited references, whether taken alone or in combination.

B. Claims 8, 16, and 23

Claim 8 recites that “the sustain electrode is electrically floated in the first waveform during the set-up interval and in the second waveform during the set-up interval of all or fewer than all of the remaining sub-fields, wherein a time interval when the sustain electrode is floated in the second waveform is set to be shorter than a time interval during which the sustain electrode is floated in the first waveform.” (See, for example, Figure 8 for support). The Sakita patent and AAPA do not teach or suggest these features.

That is, even if Sakita and AAPA were combined (applicants submit this combination is impermissible for a lack of a teaching, suggestion, or motivation to combine), the resulting combination would produce a driving method where floating and ground voltages are applied to different sub-fields in the same frame. This combination would not produce a driving method where floating voltages are applied in the initialization periods of different sub-fields of a same frame for different intervals of time.

Absent a teaching or suggestion of this specific combination of waveforms, it is respectfully submitted that a Sakita-AAPA combination does not render claim 8 or any of its dependent claims obvious. Claims 16 and 23 recite features similar to those that patentably distinguish claim 8 from the cited combination and therefore are also allowable.

C. Claims 10, 18, and 25

Claim 10 recites that “a voltage rising at a first slope is applied to the sustain electrode during said first waveform, and a voltage rising at a second slope different from the first slope is applied to the sustain electrode during said second waveform.” (See, for example, Figure 10 for support). The Sakita patent and AAPA do not teach or suggest these features.

That is, even if Sakita and AAPA were combined, the resulting combination would produce a driving method where floating and ground voltages are applied to different sub-fields in the same frame. This combination would not produce a driving method where rising voltages of different slopes are applied in the initialization periods of different sub-fields of a same frame.

Absent a teaching or suggestion of this specific combination, it is respectfully submitted that a Sakita-AAPA combination does not render claim 10 or any of its dependent claims obvious. Claims 18 and 25 recite features similar to those that patentably distinguish claim 8 from the cited combination and therefore are also allowable.

Claims 2-4 were rejected under 35 USC § 103(a) for being obvious in view of a Sakita-AAPA-Matsumoto combination. Applicants traverse this rejection on grounds that the Matsumoto patent does not teach or suggest the features of base claim 1 missing from the Sakita patent and AAPA.

New claims 26-31 have been added to the application.

Claim 26 recites that “the second waveform” of claim 8 “has a lower peak voltage than the first waveform as a result of said shorter time interval.” (See, for example, Figure 8 for support). These features are not taught or suggested by the cited references, whether taken alone or in combination.

Claim 27 recites that “the first and second waveforms” of claim 8 “have substantially a same slope.” (See, for example, Figure 8 for support). These features are not taught or suggested by the cited references, whether taken alone or in combination.

Claim 28 recites that “the first slope” in claim 10 “is greater than the second slope.” (See, for example, Figure 10 for support). These features are not taught or suggested by the cited references, whether taken alone or in combination.

Claim 29 recites that “the voltage rising at the first slope has a maximum peak voltage greater than a maximum peak voltage of the voltage rising at the second slope.” (See, for example, Figure 10 for support). These features are not taught or suggested by the cited references, whether taken alone or in combination.

Claim 30 recites that “the first slope and the second slope” in claim 10 “are non-zero slopes.” (See, for example, Figure 10 for support). These features are not taught or suggested by the cited references, whether taken alone or in combination, and these limitations also negate the argument in the Office Action that the ground voltage of Figure 3 of AAPA constitutes a waveform of a second slope.

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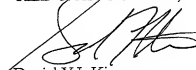
Docket No. YHK-0131

Claim 31 recites that “the second waveform has a lower peak voltage than the first waveform as a result of said shorter time interval.” These features are not taught or suggested by the cited references, whether taken alone or in combination.

In view of the foregoing amendments and remarks, it is respectfully submitted that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

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